

Clouds in the Forecast– 2012 Electronics Trends

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Texas ESD Assoc. – January 2012

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I Talk, You Think

- I – 30,000 Foot
- O – Open to Questions, Discussion
- U – How Does This Affect What I Do?

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2012 Looking Forward – Major Points

- Poli-Economics
- Themes
- End-Equipment

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Lightning – ElectroStatic Discharge

- Smaller Chip Geometries
 - Lower Voltages, Thresholds
- More Human Contact (touch)
- More Inputs
- Greater Sensitivity
- Less Packaging
- Increasing Use in Noisy Environs
 - Automotive, Industrial, Wireless Interference



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Economic Haze – Global Cloud Cover

Depressed Global Economy will Continue to
Suppress any Growth in Electronics

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The 3rd World – A New World Order

- China
- BRICS, SE Asia, S Am...
- Manufacturing to lowest cost region
- Sales to untapped regions, no history, new tech
- Intellectual Property (IP) risk, more

BRICS=Brazil, Russia, India, China, and South Africa

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Partly Cloudy – The Sun Still Shines

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Cloud with a Capital “C”

- Internet Infrastructure
- Demand Grows
- Data, Voice, Music, Photo, Video
- Security
- Storage
- WAN too (LTE, Smart Phones, FemtoCell)

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Rain Turns It Green

- All Products
- Improve Efficiency
- Longer Battery Life
- Power Management
 - Voltage, Frequency,
 - Domains
 - Demands
- Software
- Lower –
 - Use
 - Voltage, Power Consumption
 - Heat Generation, Cooling Costs

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Smart Phones – The Eyes Have It

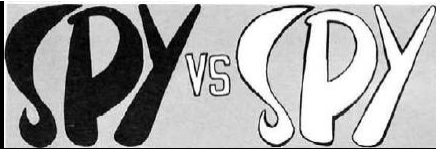
- Apple
 - Job-less
 - iPod, iPhone, iPad, TV?
- Android – Just Desserts
 - For the Rest of Us
 - Open, Network, Transaction
 - For Embedded General? Real-Time?



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- ARM
 - Processor Cores IP
 - Low Power -Driven
 - Scale
- Atom (Intel)
 - x86
 - Performance-Driven
 - Old Newbie



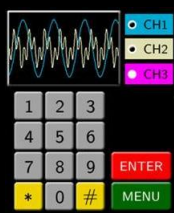
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User Interface

- Consumer Driven
- Touch Screen
- Gesture, Vision



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Connected

- Wired Network
 - TCP/IP, Ethernet
- Wireless Network
 - Wi-Fi, Bluetooth, Proprietary
 - WAN
- Internet
 - World
 - Cloud
 - “Central”
- Connectivity
 - SPI, SCI, I²C
 - USB
 - CAN
- Security

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Purple Haze – Fight to Be the Platform

- PC
 - Desktop, Notebook*
 - Servers
 - Media Center
- Smart Phones
- Cloud
- Gaming Consoles (MIPS → PowerPC)
- (Tablets) → iPad → Tablets
- (PDA)
- TV STB
- e-Readers, Fire

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Get Smart



- Smart Phones
- Smart Grid
- Smart Home
- Smart TV
- Smart Car



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Smart Grid

- Sounds Great! Benefit?
- Slow Moving, Expensive
- Alternative Energy Sources
- Point Sources, Storage
- Population Growing
- Developed World vs. 3rd



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3-D TV – Thunder or Thud?

- 3-D TV – More Thud than Thunder
 - Glasses, Content, Cost, Why
- Set Top Box (STB)
- Smart TV
- OLED, Bigger, Thinner, \$\$\$



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The Dizzying Pipe

- Triple-play Services
- Cable, Phone Company, Satellite, Wi-X (Fi, Di, Max...), Cellular
- Content, Control, Privacy, Cost
- WebTV, NetFlix, Google TV, Games
- iTunes model, Apps
- Set-Top Box (STB) or Integrated

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Half Fast

- Some people see the glass as half empty. Some see the glass as half full.
- Neil Armstrong, who had to deal with the logic and methodology of scientists and engineers in preparation for his flight to and walk on the moon, reportedly said:
“An engineer would just see the glass as being twice as big as it needs to be.”

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Medical Electronics

- Personal Medical Electronics
- Dr. Internet
- Internet Services
- Monitoring Seniors, Babies
- Privacy

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Multi-Core Processors

- Homogeneous
- Many-Core
- Heterogeneous
- Hierarchical
- Virtualization
- Distributed Intelligence

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Microsoft

- Same Ole Same Ole; Wintel
- Windows 8 – Major?
- Metro Look, Constraints
- CPM → DOS, Mac → Windows, Phone → Metro
- Add ARM Support
- Windows Mobile, yet again

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Sensors

- Rapid Rise
- More Sensitive
- Analog, Pressure, Temperature, Capacitance, Acceleration, Motion, Magnetic, Gravity, (GPS)
- Intelligence at Sensor

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Exo-System

- Unique Front End
- Intelligent Device
 - PC, Smart Phone, Tablet ...
 - Human-Machine Interface
 - Apps
- Cloud
 - Services, Revenue Stream
 - Connectivity, Carriers

+ BlackBox,
Standard,
Exists,
Remote,
- Dependent,
Configuration,
Connected,
Diversity

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Take Home

- Many cloud photos found on <http://cloudappreciationsociety.org>
- Numerous terms described in the glossary at www.strategysanity.com/glossary.html
- Objective Analysis www.objective-analysis.com



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 - Highly-respected
 - Three decades of relevant industry experience

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Significant Strengths

- Tech-savvy
- Embedded processor application markets
- Extensive marketing experience
- Engineering background
- Widespread contacts
- Insightful, creative
- Highly-regarded, independent, personal

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